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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/873,143	06/01/2001	Akio Yamaguchi	70191	3264

7590 03/29/2005

McGLEW AND TUTTLE, P.C.
SCARBOROUGH STATION
SCARBOROUGH, NY 10510-0827

EXAMINER

TRAN, KHANH C

ART UNIT	PAPER NUMBER
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2631

DATE MAILED: 03/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/873,143

Applicant(s)

YAMAGUCHI ET AL.

Examiner

Khanh Tran

Art Unit

2631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☒ Claim(s) 3-6 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 5 is objected to because of the following informalities: in line 1, "claim1" should be changed to -- claim 1 --. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tomlinson et al. U.S. Patent 4,961,206.

Regarding claim 1, Tomlinson et al. invention is related to data modems utilizing digital filters. Tomlinson et al. does not expressly teach the modem is digital modem as claimed. However, because Tomlinson et al. invention is specifically directed to modem employing digital filters, one of ordinary skill in the art would have recognized that the data modem taught in Tomlinson et al. invention is equivalent to digital modem.

As disclosed in column 25, lines 25-45, the data modem includes a transmitter unit and a receiver unit. One of ordinary skill in the art would appreciate that the transmitter unit would include a modulator. The data modem taught in Tomlinson et al. invention applies to QPSK and BPSK modulation. Discussed in column 1, lines 15-55,

for binary phase shift keying case, a logic "1" value of the binary signal produces a modulator output $+A \cos \omega_{ct}$ and a logic "0" value of the binary signal produces a modulator output $-A \cos \omega_{ct}$. In light of the foregoing discussion, the modulator outputs correspond to the claimed modulation signals; $+A \cos \omega_{ct}$ $-A \cos \omega_{ct}$ correspond to the claimed signal $h[k]$ and $h[-k]$; A and $-A$ correspond to the claimed transmission 1 and -1 . Furthermore, amplitude A and frequency of binary signals are constant and the phase inherently proportional to the square of the frequency.

In column 23, line 30 via column 27 line 67, figures 26 27 show a demodulator embodiment including digital filters 59 60 and a decoding ROM 122. As appreciated by one of ordinary skill in the art, the digital filters 59 60 generate filter outputs as an approximate convolution integral of the input signal with the filter impulse response; see column 1, lines 59-67. Tomlinson et al. does not expressly show the square after the linear convolution as claimed. Nevertheless, because the square of the signal represents of magnitude of the data signal, it would have been obvious for one of ordinary skill in the art that Tomlinson et al. demodulator would calculate magnitude of data signal. Figure 26 includes decoding ROM 122 for recovering the phase signal, hence the magnitude inherently is calculated. Figure 17 shows another embodiment of a demodulator, wherein output is combined through a MUX 67. In light of that, the demodulator determines the difference between the received signals as claimed.

Regarding claim 2, figure 6 shows a modulator of an embodiment, the modulator including D/As 30, mixers 12, sum 16, which constitute an analog circuit for output processing of a modulation signal.

Allowable Subject Matter

3. Claims 3-6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Al-Khatib US 6,512,799 B2 discloses "Digital Communication System And Method For Increased Bit Rates".

Qalsh et al. US 4,085,449 discloses "Digital Modem".

Qureshi US 6,512,799 B2 discloses "Dual Processor Digital Modem Apparatus".

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh Tran whose telephone number is 571-272-3007. The examiner can normally be reached on Monday - Friday from 08:00 AM - 05:00 PM.

Art Unit: 2631

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KCR

Thanh Cong Tran
Examiner KHANH TRAN

03/18/2005